Linking Social Protection and Adaptive Capacity to Minimize Risk of Drought through Agroforestry in Zambia

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CLIMATE CHANGE AGRICULTURE AND FOOD SECURITY

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Adaptive Capacity

* Adaptive capacity is the ability of individuals and groups to
  * adapt or adjust to climate variability and change (Gupta et al. 2010)
  * accommodate shock and stress to systems (Klein and Huq 2003)
  * to take advantage of the benefits and opportunities associated with a changing climate (Jones et al. 2010)

* Jones et al. (2010) identify five key elements that contribute to adaptive capacity based on IPCC's assessment reports. These include:
  * **Asset base**
  * **Institutions and entitlements**
  * Knowledge and information
  * Innovation
  * Flexible forward-looking governance.

Types of Social Protection (Devereux and Sabates-Wheelern 2004)

1. Protective measures, such as relief from deprivation based on targeted safety nets (i.e. cash transfers).
2. Formal preventive measures against deprivation through formal social insurance programs (i.e. weather indexed insurance).
3. **Promotive measures, which enhance income and capabilities through livelihood-enhancing programs (microfinance, starter packs, common property arrangements, crop or income diversification).**
4. Transformative measures that address concerns of social justice and exclusion arising from social inequity and exclusion of the poorest and most marginalized groups (i.e. collective action for workers' rights, or protecting minority ethnic groups against discrimination).

Climate Change in Zambia

* The temperature in Zambia is increasing at the rate of about 0.6°C per decade, which is ten times higher than the global or southern African rate of increase in temperature (del Ninno and Marini 2005)
* Between 1991 and 2001, Zambia suffered four droughts of different severity (1991-92, 1994-95, 2000-01 and 2001-02).
* Increasing dryness has negatively affected soil conditions, leading to poor growth of crops.

Adaptive Capacity and Assets in Zambia

* Assets
  * *Natural capital*: "fertilizer trees"
  * *Financial capital*: financial capital is protected by planting fertilizer trees

Photo: Sesbania Sesban, taken by Oluyede C. Ajayi

Adaptive Capacity & Institutions in Zambia

Households' assessment	Collective agreement on grazing (%)	
	Initial period (2000)	Five years after (2005)
Effective	16	46
Average	20	34
"Not working"	64	20
Total	100	100

Promotive Social Protection in Zambia

* Income Enhancement
  * Planting fertilizer trees allows for the protection of financial capital and improved soil moisture that can potentially increase income and yields or maintain them in times of drought. Such trees could potentially impact poverty by reducing it.
* Capacity Enhancement
  * Informal institutions and system of chiefs have allowed for a solution to protecting fertilizer trees allowing farmers to benefit from the training they have received NGOs and extension services on how to maintain fertilizer trees.
* *Ecological Enhancement*
  * *With soil structure and physical properties improved, soil moisture is retained with the potential to withstand the effects of droughts.*
  * *Ecosystem services need to be integrated with socio-economic aspects of social protection.*

Conclusions

* Social protection and adaptive capacity should be analyzed together
* Social protection measures can be informal and effective
* Role of agroforestry in social protection and adaptive capacity
* Include ecological enhancement as a factor within promotive social protection

Web link to ICRAF Working Paper:

http://www.worldagroforestry.org/downloads/publications/PDFs/WP11269.PDF